



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/504,395	02/24/2005	Kevin Ronald McWilliams	CES-72	3613
Ira S Dorman Suite 200 330 Roberts Street East Hartford, CT 06108				
7590 05/18/2007			EXAMINER PAIK, SANG YEOP	
			ART UNIT 3742	PAPER NUMBER
			MAIL DATE 05/18/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/504,395

Applicant(s)

MCWILLIAMS, KEVIN RONALD

Examiner

Sang Y. Paik

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schilling et al (US 5,496,047) in view of Payne et al (US 4,282,422).

Schilling shows an electric heater assembly comprising a first heating zone (4), a second heating zone (5), each with a heating element with its respective first cyclic energy controller relay (24) and a second cyclic energy controller relay (23), the first cyclic energy controller is controlling the power of the first heating element, the second cyclic energy controller energizes the second heating element. However, Schilling does not show the first cyclic energy controller to energize less than full duty cycle while providing a substantially full maximum duty cycle to the second heating element.

Payne show an electric heater assembly having a plurality of heating elements, each having a cyclic energy controller to power each of the heating elements. Payne shows that each heating element is selectively controlled so that each is capable of being energized at the maximum duty cycle to less than the maximum duty cycle (see Figure 3). Payne further shows the microprocessor-based control system to control the cyclic energy controllers such as the triacs/relays.

In view of Payne, it would have been obvious to one of ordinary skill in the art to adapt Schilling with varying power duty cycle outputs to each of the heating elements so that each element can achieve the desired power output selectively set by the user including the application of full maximum power to one heating element while applying less than maximum power such as 80 percent duty cycle to other heating elements. Furthermore, it would have been obvious to one of ordinary skill in the art to adapt Schilling with the microprocessor to selectively control the power input of the individual heating elements, including manual input selection means (5) as taught by Payne.

3. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schilling as applied to claims 1-16 above, and further in view of McWilliams (US 4,393,299) or Gossler (US 4,347,432).

Schilling shows the assembly claimed except the thermal insulation wall.

McWilliams or Gossler shows that it is well known in the art to provide a thermal insulation wall between individual heating zones. In view of McWilliams or Gossler, it would have been obvious to one of ordinary skill in the art to adapt Schilling, as modified by Payne, with a thermal insulation wall to divide heating zones to better control its respective heating surfaces with a more accurate heating temperature.

Response to Arguments

4. Applicant's arguments filed 3/5/07 have been fully considered but they are not persuasive.

The applicant argues the combination of the references is lacking the required suggestion or motivation for modifying Schilling with Payne, and thus the combination is improper. The

Art Unit: 3742

applicant argues Schilling which desires to achieve a uniform heating would not want to provide selective settings of the power outputs for each of the “two or adjacent” heating elements and that the incorporation of the Payne would render the Schilling unit unsatisfactory for its intended purpose.

The applicant argues Schilling has “either both heaters operate either at full power or neither does” and thus Schilling teaches against an essential feature of Applicant’s claims. This argument is not deemed persuasive. Schilling clearly teaches that different power waves or ratio is applied to each of the heating elements depending upon the temperature (see column 7, lines 5-26). The different level of power is applied through each respective relay of the heating elements as done in the applicant’s invention. Schilling does not in way teach away the intended purposes of the invention but has the required structure capable of performing the intended purposes of the applicant’s invention.

As indicated in the office action, the examiner has applied to Payne to show the recitation of selecting maximum duty cycle to one heating element while providing less than maximum duty cycle to other heating element. Payne shows a plurality of heater that are operable together at a maximum power and that in order to avoid high in-ruch current to all of the heating elements at the selected maximum cycle, a staggered operation is achieved. This operation does not in anyway teach away the motivation to combine with Schilling or destroy the intended purposes of the present invention. Payne further shows it is known to use a microprocessor based control system to control the powers distribution.

As Schilling shows it is desirable to set varying ratio of the number of waves to control varying degrees of the temperatures for each of the heating elements, and as Payne shows that it

Art Unit: 3742

is known in the art that a selected maximum cycle can be applied to all heating elements, one of ordinary skill in the art would have been motivated by teaching of Payne, to use staggering operation to avoid the high inrush current when all heating elements are operating at the maximum power, and furthermore, having less than maximum duty cycle to one of heating elements is well known to provide less heating temperature as may be desired. It is also noted that Schilling allows to have varying degrees of power cycle ratio to each of the heating elements in order to achieve the desired uniform heating temperature, and it is well known that as the heating elements are heating an object placed thereon, the heating element at the outer periphery of the heating zone is more exposed to the ambient temperature which tends to cool, and it would have required a higher heating temperature at the outer heating element to compensate for such heat loss and thus achieve a uniform heating temperature.

While Payne shows the heater assembly having discrete and separate heating surfaces, the power control operation of the heating elements in order to avoid high inrush current would have been applicable to the heating structure of Schilling as they are in the same field of endeavor which is in the field of electrical heating elements and that the teachings of Payne would have been also applicable to Schilling for the safe operations of electrical heating elements.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

Art Unit: 3742

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y. Paik whose telephone number is 571-272-4783. The examiner can normally be reached on M-F (6:30-3:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Sang Y Paik
Primary Examiner
Art Unit 3742

syp